

1. A speech recognition system comprising computer memory storing:

a first set of speaker-independent word models used to match a word in an utterance of a user with a word model in said first set;

a second set of speaker dependent word models derived from speech of a particular user and used to match a word in an utterance of said particular speaker;

a program portion used to identify words in utterances of said particular user by attempting to match portions of an audio signal with

word models among said first set; and

word models among said second set.

2. A method of operating a speech recognition system comprising:

storing a first set of speaker-independent word models used to match a word in an utterance of any user with a word model in said first set;

storing a second set of speaker dependent word models derived from speech of a particular user;

recognizing words in utterances of said particular user by attempting to match portions of an audio signal with

word models among said first set; and

word models among said second set.

3. The method according to claim 2 further comprising:

inviting said particular user upon first use of said speech recognition system to speak training words for deriving said second set;

5/17
4 A1

deriving said second set from said training words; and
storing said second set.

4. The method according to claim 2 further comprising:

inviting said particular user to speak training utterances of a word upon a
predetermined number of failures to recognize said word using said first set of
word models;
deriving a word model from said training utterances; and
storing said word model from said training utterances, in said second set.

5. The method of claim 2, further comprising:

determining a likelihood of recognizing a spoken word using said first set;
deriving a word model from a spoken word marginally recognized using said
first set;
storing said word model in said second set.

6. A method of enhancing speech recognition comprising:

providing a set of user-independent word models derived from utterances of a
plurality of speakers;
providing a set of user-dependent word models for ones of a plurality of users
each derived from utterances of one of said users;
matching an utterance from one of said users to one of said user-independent
word models; and
matching another utterance from said one of said users to one of said user-
dependent word models.

1 7. The method according to claim 6 further comprising:

2 inviting a new user to speak training words for deriving a set of user-dependent
3 word models;

4 deriving said set of user-dependent models from said training words; and

5 storing said set of user-dependent word models.

1 8. The method according to claim 7 further comprising:

2 inviting a new user to speak training utterances of a word upon a predetermined
3 number of failures to identify the word among said user-independent word models
4 when no model for said word is present in said user-dependent models;

5 deriving a word model from said training utterances; and

6 storing the derived word model in said set of user-dependent word models.

7 9. The method according to claim 8 wherein said user-dependent word models are
8 stored in a separate memory location from said user-independent word models.

9 10. A method of operating a speech recognition system, comprising:

1 storing a first set of recognition models, for recognizing speech independent of
2 the identity of a user, said first set of recognition models for recognizing a
3 plurality of system commands;

4 storing a second set of recognition models, for recognizing speech of a particular
5 user, at least one model of said second set for initiating performance of at least
6 one of said plurality of system commands, so that at least one of said system
7 commands may be performed in response to a recognized user chosen
8 utterance.
9

1 11. The method of claim 10, wherein a single utterance corresponding to one of said
2 second set of models may correspond to a plurality of sequentially performed
3 system commands.

1 12. The method of claim 10, further comprising:

2 comparing each model of said second set of recognition models to each of said first
3 set of recognition models and other ones of said second set, to ensure that speech
4 recognized using each model in said second set will not be mistakenly recognized
5 using any model in said first set, or other models in said second set, prior to storing
6 said each model.

1 13. A voice messaging system, comprising a speech recognition system for controlling
2 operation of said voice messaging system, said speech recognition comprising:

3 memory storing

4 a first set of word models, for recognizing speech independent of the
5 identity of a user, said first set of word models for recognizing a plurality of
6 system commands controlling operation of said voice messaging system;

7 a second set of models, for recognizing speech of a particular user, at
8 least one model of said second set for initiating performance of at least
9 one of said plurality of system commands, so that at least one of said
10 system commands may be performed in response to a recognized user
11 chosen word.

1 14. The voice messaging system of claim 13, wherein said memory further contains
2 computer executable instructions, adapting said system to record utterances by said
3 particular user to form said second set, and to collect indicators of system
4 commands to be associated with each model in said second set.

1 15. The voice messaging system of claim 14, wherein said memory further stores
2 computer executable instructions adapting said system to prompt a user to record
3 utterances in place of system commands.

1 16. The voice messaging system of claim 14, wherein said memory further contains
2 computer executable instructions adapting said system to ensure that speech
3 recognized with each model in said second set will not likely be recognized with any
4 model in said first set or other models in said second set, prior to storing said each
5 model in said second set.

1 17. The voice messaging system of claim 16, wherein at least one model in said second
2 set initiates performance of more than one of said plurality of system commands.

3 18. A computer readable medium, storing

4 a first set of recognition models, for recognizing speech independent of the
5 identity of a user at a speech recognition system, at least some of said models in
6 said first set for recognizing a plurality of system commands;

7 computer executable instructions, that when executed at said speech recognition
8 system, adapt said speech recognition system to form and store a second set of
9 models, for recognizing speech of a particular user, with at least one model of
10 said second set for initiating performance of at least one of said plurality of
system commands, so that at least one of said system commands may be
performed in response to a recognized word chosen by said particular user.

1 19. The computer readable medium of claim 18, further storing computer executable
2 instructions adapting said system to record utterances by said particular user to form
3 said second set of models, and to associate at least one system command with
4 each model in said second set of models.

1 20. The computer readable medium of claim 19, further storing computer executable
2 instructions adapting said system to prompt a user to record utterances in place of
3 system commands.

4 21. The computer readable medium of claim 18, further storing computer executable
5 instructions adapting said system to ensure that speech recognized using each
model of said second set will not be mistakenly recognized with any one model in
said first set of recognition models, or other models in said second set of models,
prior to storing said each of said models in said second set.

006260"4T82Z960